REMARKS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-34 are currently pending. Claims 29-34 have been added; and Claims 1-3, 7-9, 14-16, and 21-28 have been amended by the present amendment. The changes to the claims are supported by the originally filed specification and do not add new matter.

In the outstanding Office Action, Claims 3, 23, and 28 were objected to as containing informalities; Claims 1, 7, 14, 15, 21, 23, 26, and 27 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,317,617 to Gilhuijs et al. (hereinafter "the '617 patent"); Claims 2-4, 6, 8-11, 13, 16-18, 22, 24, 25, and 28 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the '617 patent in view of U.S. Patent No. 7,103,205 to Wang et al. (hereinafter "the '205 patent"); Claims 5 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the '617 patent; Claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the '617 patent in view of U.S. Patent No. 5,740,225 to Nabatame (hereinafter "the '225 patent"); and Claim 20 was rejected under 35 U.S.C. § 103(a) as being unpatentable over the '617 patent in view of U.S. Patent No. 6,195,577 to Truwit et al. (hereinafter "the '577 patent").

Applicants respectfully submit that the objections to Claims 3, 23, and 28 are rendered moot by the present amendment to those claims. Claim 3 has been amended to depend from Claim 2, and the informalities noted in Claims 23 and 28 have been corrected. Accordingly, the objections to the claims are believed to have been overcome.

Amended Claim 1 is directed to a computer-aided diagnostic system, comprising: (1) a sick portion detecting device configured to detect a sick portion candidate based upon a simple X-ray image acquired by a first modality; and (2) a correspondence displaying device configured to relate the position of the detected sick portion candidate on an X-ray CT image

acquired by a second modality different from the first modality and to display it, <u>wherein the correspondence displaying device displays the X-ray CT image of an axial face corresponding to a position of a mark selected based upon the sick portion candidate displayed on the simple X-ray image</u>. The changes to Claim 1 are supported by the originally filed specification and do not add new matter.[1]

The '617 patent is directed to a method and system for the computerized automatic analysis of lesions in magnetic resonance (MR) images. In particular, the '617 patent discloses a method for the analysis of a lesion in anatomy, including the steps of obtaining plural image data of the same portion of the anatomy derived from at least two imaging modalities; identifying from the plural image data a possible lesion in the plural images; extracting, for each of the plural images, at least one feature related to characterization of a lesion from the image data; and merging in a common image classifier a plurality of extracted features including at least one feature obtained from each of the plural images derived from the at least two imaging modalities. Thus, the '617 patent discloses that features of potential lesion candidates obtained from plural images from different modalities are used as inputs to a <u>classifier</u> in order to classify the potential lesion as a lesion or a false positive.

However, Applicants respectfully submit that the '617 patent fails to disclose a computer-aided diagnostic system including <u>a correspondence displaying device that displays an X-ray CT image of an axial face corresponding to a position of a mark selected based upon a sick portion candidate displayed on a simple X-ray image</u>, as required by amended Claim 1. The '617 patent does not teach or suggest having a mark selected based upon a sick portion candidate displayed on an simple X-ray image used to display an X-ray CT image of an axial face corresponding to a position of the selected mark, as required by Claim 1. Rather, the '617 patent merely discloses using image data from multiple modalities to extract

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[1] See, e.g., pages 25-28 in the originally filed specification.

features that are used as inputs to a classifier to identify lesions. Accordingly, Applicants respectfully submit that the rejection of Claim 1 is rendered moot by the present amendment to that claim.

Independent Claim 7 recites a correspondence displaying device that displays a transform image corresponding to a position of a mark selected based upon the sick portion candidate displayed or on an X-ray CT image of an axial face. Similarly, Claim 14 recites a correspondence displaying device that displays a reconfigured image corresponding to a position of a mark selected based upon a sick portion candidate displayed on an X-ray CT image of an axial face. Further, Claim 15 recites a correspondence displaying device that displays an X-ray CT image of an axial face corresponding to a position of a mark selected based upon a sick portion candidate displayed on a reconfigured image, while Claim 21 recites that an X-ray CT image of an axial face corresponding to a position of a mark selected based upon the sick portion candidate displayed on a simple X-ray image is displayed. Claims 23, 26, and 27 recite similar limitations. As discussed above, the '617 patent fails to disclose these limitations. Accordingly, for the reasons stated above, Applicants respectfully submit that the rejections of Claims 7, 14, 15, 21, 23, 26, and 27 are rendered moot by the present amendment to those claims.

Amended Claim 2 is directed to a computer-aided diagnostic system comprising: (1) a first sick portion detecting device configured to detect a sick portion candidate based upon a simple X-ray image acquired by a first modality; (2) a second sick portion detecting device configured to detect a sick portion candidate based upon an X-ray CT image related to the same region of interest of the same subject acquired by a second modality different from the first modality; and (3) a detection result synthesizing device configured to compare the results of detection by the first and second sick portion detecting devices, wherein the detection result synthesizing device compares positions of marks respectively selected based

upon the sick portion candidates respectively displayed on the simple X-ray image and on the

X-ray CT image of an axial face. Amended Claim 2 is supported by the originally filed

specification and does not add new matter.[2]

Regarding the rejection of Claim 2 under 35 U.S.C. § 103(a), the Office Action

asserts that the '617 patent discloses everything in Claim 1 with the exception of the second

sick portion detecting device and the detection results synthesizing device, and relies on the

'205 patent to remedy those deficiencies.

As discussed above, the '617 patent is directed to a method and system for the

computerized automatic analysis of lesions in MR images, and the merging of extracted

features from X-ray and/or ultrasound images in order to further characterize a lesion and to

make a diagnosis. However, as discussed above, the '617 patent fails to disclose the second

sick portion detecting device and the detection result synthesizing device recited in amended

Claim 2. Moreover, Applicants respectfully submit that the '617 patent fails to disclose that

the detection result synthesizing device compares positions of marks respectively selected

based upon the sick portion candidates respectively displayed on the simple X-ray image and

on the X-ray CT image of an axial face, as recited in amended Claim 2.

The '205 patent is directed to a method for facilitating the detection of abnormalities

in a breast, comprising displaying an X-ray mammogram image of the breast to a user;

displaying a thick-slice ultrasound image of the breast near the X-ray mammograph image;

and overlaying one of the ultrasound image or the X-ray mammograph image over the other

to form a bimodal image, such that the bimodal image facilitates user perception of structures

within the breast. In particular, as shown in Figures 2-4, the '205 patent discloses an X-ray

image in Figure 2, an ultrasound image in Figure 3, and the superposition of the ultrasound

image and the X-ray image in Figure 4.

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[2] See pages 25-28 of the specification.

However, Applicants respectfully submit that the '205 patent fails to disclose a detection result synthesizing device that compares positions of marks respectively selected based upon sick portion candidates respectively displayed on a simple X-ray image and on an X-ray CT image of an axial face, as required by Claim 2. Rather, the '205 patent merely discloses the superposition of an X-ray image and an ultrasound image. The '205 patent does not disclose the comparison of the positions of marks respectively selected based upon sick portion candidates respectively displayed on a simple X-ray image and an X-ray CT image of an axial face, as required by Claim 2.

Thus, no matter how the teachings of the '617 and '205 patents are combined, the combination does not teach or suggest the detection result synthesizing device recited in amended Claim 2. Accordingly, Applicants respectfully submit that the rejection of Claim 2 (and dependent Claims 4 and 6) is rendered moot by the present amendment to Claim 4.

Independent Claim 8 recites a correspondence displaying device that displays the X-ray CT image of an axial face corresponding to a position of a mark selected based upon the sick portion candidate displayed on a transformed image. Further, Claim 9 recites a detection result synthesizing device that compares positions of marks respectively selected based upon sick portion candidates respectively displayed on the X-ray CT image of an axial face and on a transformed image. Claims 16, 22, 24, 25, and 28 recite similar limitations. As discussed above, the combined teachings of the '617 and '205 patents fail to disclose these limitations. Accordingly, for the reasons stated above, Applicants respectfully submit that the rejections of Claims 8, 9, 16, 22, 24, 25, and 28 (and all similarly rejected dependent claims) are rendered moot by the present amendment to those claims.

Regarding the rejection of dependent Claims 19 and 20 under 35 U.S.C. § 103(a), Applicants respectfully submit that the '225 and '577 patents fail to remedy the deficiencies of the '617 and '205 patents, as discussed above. Accordingly, Applicants respectfully

submit that the rejections of dependent Claims 5, 12, 19, and 20 are rendered moot by the

present amendment to independent Claims 1, 7, and 14.

The present amendment also sets forth new Claims 29-34 for examination on the

merits. New Claims 29-34 are supported by the originally filed specification and do not add

new matter.[3] New Claim 29, which depends from Claim 2, clarifies that the correspondence

displaying device is configured to cause the mark displayed when the sick portion candidate

is detected on only one image among the simple X-ray image and the X-ray CT image to be

different from marks respectively displayed when the sick portion candidate is detected on

both images. New Claims 30-34 recite a similar limitation. Based on the asserted

allowability of the independent claims, Applicants respectfully submit that new Claims 29-34

patentably define over the cited references.

Thus, it is respectfully submitted that independent Claims 1, 2, 7-9, 14-16, and 21-28

patentably define over any proper combination of the cited references.

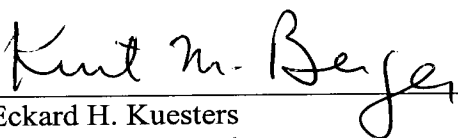[3] See Figures 10A, 10B, and page 30, lines 6-25 in the specification.

Consequently, in view of the present amendment, and in light of the above discussion, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

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Respectfully submitted,

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